Energy Savings Performance Contracting: The Investment Grade Audit
July 21, 2011

ARRA EECBG Recipient Webinar Series
Welcome to today’s session for state and local grantees on Energy Savings Performance Contracting (ESPC): The Investment Grade Audit (IGA)

Some tips before we get started…

• All attendee phone lines are muted
• Session will be recorded
• Please submit your questions via the Questions window
• As many questions as possible will be answered during the session
• Presentation slides will be sent to attendees a few days after the training
DOE’s Technical Assistance Program (TAP) supports the Energy Efficiency and Conservation Block Grant Program (EECBG) and the State Energy Program (SEP) by providing state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs.
How Can TAP Help You?

TAP offers –
• One-on-one assistance
• Extensive online library, including –
  – Webinars
  – Events Calendar
  – TAP Blog
  – Best practices and project resources
  – Facilitation of peer exchange

Topics include –
• Energy efficiency and renewable energy technologies
• Program design and implementation
• Financing
• Performance contracting
• State and local capacity building
Provides a platform for state, local, and tribal government officials and DOE’s network of technical and programmatic experts to connect and share best practices on a variety of topics.
Accessing TAP Resources

We encourage you to –

1) Explore our online resources via the Solution Center

2) Submit a request via the Technical Assistance Center

3) Ask questions via our call center at 1-877-337-3827 or email us at solutioncenter@ee.doe.gov
Today’s Speakers

Irina Bulkley-Hopkins
SRA International, Inc.

Linda Smith
9K ft Strategies in Energy, LLC

Bonnie Phillips
City of Cincinnati
Office of Environmental Quality
Today You Will Learn

• What is an Investment Grade Audit (IGA)
• What to Expect with an IGA
• How to Ensure IGA Success
• What happens during a facility visit
• What is an Energy Baseline
• What are key IGA results and decision items
• What are potential IGA shortcomings
• What to expect in an IGA report
• Available resources
What is an Investment Grade Audit (IGA)

- A detailed account of energy and water use
- Cost/savings analysis of potential energy and water savings opportunities
- Project proposal of bundled measures, with a financing plan as well as implementation and savings verification plans
What to Expect: IGA role in the ESPC process

ESPC Process

1. Internal Guidance Meeting
2. Issue RFP
3. Select ESCO
4. Negotiate Investment Grade Audit (IGA) Contract
5. Issue IGA contract
6. ESCO performs IGA
7. Realize Savings
8. ESCO implements ECMs
9. Issue Implementation Contract
10. Negotiate ESP Contract
What to Expect:
Types of Energy Conservation Measures (ECMs)

- Heating
- Cooling
- Ventilation
- Controls
- Lighting (including Traffic Lights)
- Deferred Maintenance
- Renewables
- Water and Waste Water
What to Expect: Key IGA Components

• Utility Use Baseline
• Scope of Work
• Fixed Price
• Financing Plan
• Commissioning Plan
• Measurement & Verification Plan
How to Ensure IGA Success

- Use resources and get assistance
- Establish an internal team
- Develop a sound contract
- Be open to auditing all facilities
- Leverage funding sources
- Work with your ESCO
BIG QUESTION:

IN THE MULTITUDE OF WHAT IS AVAILABLE, WHAT DATA NEEDS EVALUATION AND HOW?
Additional Data to Review during an IGA

- Building square footage
- Construction data for buildings and major additions, including building envelope
- Occupancy and usage information
- Energy-consuming/saving equipment already used on the premises (review large equipment specification sheets)
- Energy management procedures utilized on the premises
- Energy-related improvements already made or currently being implemented
- Changes in the structure of the facility or energy-using or water using equipment
Additional Data to Review during an IGA (continued)

- Future plans for building/equipment modifications and replacements
- Facility drawings and specifications
- Original construction submittals and factory data
- Operating engineer logs, maintenance work orders
- Records of maintenance expenditures on energy-using equipment, including service contracts
- Prior energy audits or studies
- Commissioning documents
- Computerized maintenance system records
- List of motors
- Recent combustion tests (e.g., for the boilers)
Facility Visit

- Discuss facility operation
- Discuss comfort problems and requirements
- Discuss facility improvements
- Conduct equipment survey
- Measure all important parameters, collect data
- Log power loads
- Identify approach to hazardous materials (if any)
Energy Baseline

is the energy consumption that would have happened if all the existing equipment and systems were working, and normal service levels were maintained at the pre-project level of energy efficiency under the same demands (such as the weather).
IGA Results and Decision Items: Savings Opportunities

• Facilities description and status (discussed in previous slide)
  – Consider future plans for building use
  – Include a needs assessment from maintenance and occupants

• Baseline of energy consumption (discussed in previous slide)
  – Review and approve
  – Consider what-ifs

• Analysis of Each Proposed Measure
  – Review cost and savings estimates
  – Ensure the measurement and verification plan is viable for each measure
• Firm Fixed Price
  – Conduct a reasonableness test of itemized costs for each measure
  – Consider the elements in the overall price

• Savings Estimates and Guarantee
  – Consider the potential impact on the utility rate structure
  – Evaluate the proposed escalation rate and consider its impact

• Financing Model
  – Consider proposed financing and funding sources
  – Evaluate the payment plan over the financing term
  – Determine how to secure the financial provider
  – Consider all conditions, early payment options, penalties
IGA Results and Decision Items: Implementation Plans

- **Commissioning Plan**
  - Ensure the commissioning plan is sound

- **Construction Plan**
  - Consider what-ifs and how they’ll be managed, including hazardous materials

- **Measurement and Verification Plan**
  - Assess the overall plan
  - Ensure it’s a protocol that can be clearly applied and sustained
Potential IGA Shortcomings

- Incomplete audit
- Pre-defined scope
- Unclear pricing
- Ineligible savings streams
- Lack of due diligence
IGA Report Expectations

- Realistic assumptions
- Completeness
- A clear guide to implementation
- A roadmap to any future energy efficiency retrofit work in the facility
Cincinnati’s ESPC Success

- $14.7M - energy efficient upgrades in 69 of 400 bldgs.
- $11M financed with energy savings, $1.7M City Capital, $1.1M EECBG, $440K Duke Rebates, $400K State Grant
- $1M+ Guaranteed Annual Energy Savings.
- 10M kWh and 150K ccf reduction.
- Nearly 9K metric tons/year of GHGE Reduction
Leveraging of City Dollars to Reduce Costs/Increase Energy Efficiency

City Financed with GUARANTEED Energy Savings
Duke Energy Rebates
City Capital
Federal Grant (EECBG)
State ODOD Grant

Total Project Costs: $14,791,331
## City of Cincinnati Energy Services Performance Contracts (2009 and 2010)

<table>
<thead>
<tr>
<th>Dept./ Contractor</th>
<th>Total Project Costs</th>
<th>City Financed w/Energy Savings</th>
<th>City Capital</th>
<th>Duke Energy Rebates/ State Grants**</th>
<th>EECBG Funding</th>
<th>Guaranteed Annual Energy Savings</th>
<th>Energy Reduction (electric/gas)</th>
<th>Energy Generation</th>
<th>GHG Emission Reduction (metric tons/year)</th>
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<td><strong>2009 Energy Services Performance Contracting – Round #1</strong></td>
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<td>Public Serv./ Ameresco</td>
<td>$2,723,812</td>
<td>$1,696,945</td>
<td>$230,000</td>
<td>$59,000/ $402,937</td>
<td>$334,930</td>
<td>$153,761</td>
<td>1,552,865 kWh/ 11,703 ccf</td>
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<td><strong>2009 Total</strong></td>
<td>$5,908,691</td>
<td>$4,511,652</td>
<td>$469,000</td>
<td>$190,172/ $402,937**</td>
<td>$334,930</td>
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<td>Health/ Ameresco</td>
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<td><strong>Total Ameresco</strong></td>
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Facility Audits

- Contracts set up to allow for “free” audits with performance contracts.
- City Departments identify buildings for consideration obtain proposal, certify funds.
- Multiple meetings with facility mgmt. staff to discuss planned future use of building and maintenance issues.
- ESCO reviews energy bills and sets priorities based on energy reduction opportunities and maintenance needs.
- Decisions made about use of capital funds.
- Facility Managers have final say on selection of buildings, sub-contractors, and equipment to be used.
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<td>801 Plumb Street</td>
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Totals: 806,801 $931,970 $377,459 $0.94 $0.82 $1.75

Total Gas and Electric Costs: $1,309,429
You’re not on your own!!!

• Access the U.S. DOE Solution Center:
  http://www1.eere.energy.gov/wip/solutioncenter/default.html

• Consider an IGA contract template:
  http://www.energyservicescoalition.org/resources/model/index.html#PreApproved_Contracts

• Get expert assistance:
  – Contact your state energy office where technical assistance may be available:  http://naseo.org/members/index.html
  – Consider hiring a consultant to advise you
  – Learn from ESCOs – just ask!
Please join us again:

Title: Furthering Your Local Governments’ Energy Efficiency Goals: Part 1 – Getting Support From Local Leaders
Host: Katy Newhouse, ICF International; NASEO
Date: July 26, 2011
Time: 2:00 – 3:30 PM EDT

Title: Exploring Power Purchase Agreements – The Basics Part 1
Host: Paul Aldretti, Center for Climate Strategies; ICF International
Date: July 27, 2011
Time: 1:00 – 2:30 PM EDT

Title: Introduction to using Community-Wide Behavior Change Programs to Increase Energy Efficiency
Host: Sarah Busche, NREL
Date: July 28, 2011
Time: 3:00-4:15 PM EDT

For the most up-to-date information and registration links, please visit the Solution Center webcast page at www.wip.energy.gov/solutioncenter/webcasts
Contacts

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Grantee Speaker

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